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ABSTRACT

A "tacit" dimension of knowledge is being studied within the Swedish Research on Higher Education Program. This tacit dimension includes the practitioner's capacities for applying knowledge in practice, taking a personal stance, having a sense of history, and dealing with personal and moral problems. This kind of knowledge is assumedly unnoticed in course design, teaching and testing, and recruiting and promotion. Tacit knowledge is of particular interest in new professions such as technology, economy, computer science, and for various experts and administrators. The project will systematize the components of tacit knowledge with the aid of conceptual analysis; epistemology; and the demands from society and public debate, from employers, and from students, teachers, and administrators. Topics addressed in this newsletter issue are: the university and professionalization; research problems of investigating tacit knowledge; scientific versus traditional knowledge; obstacles against cultivating tacit knowledge; analyzing knowledge and practice; solving problems and "managing messes" in practice; acquiring knowledge; knowledge maintenance, distribution, and coordination; professional knowledge of organizations; the relation of the professional to others; and moral reasoning and action. (SW)

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THE TACIT DIMENSION OF PROFESSIONAL KNOWLEDGE
From Higher Education to Profession.

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SUMMARY

This newsletter describes a study conducted within the Swedish Research on Higher Education Program. Its aim is to investigate a "tacit" dimension of knowledge including the practitioner's capacities for applying knowledge in practice, taking a personal stance, having a sense of history and having the capacity to deal with personal and moral problems. This kind of knowledge assumedly is unnoticed in the design of courses, in teaching and examination and in recruiting and promotion.

Tacit knowledge is of particular interest in new professions such as technology, economy, computer science and for various experts and administrators. In public debate and in internal debate in higher education, it has been alleged that the education of these groups overemphasizes text books, theory and technology at the expense of developing less conspicuous capacities which would permit professionals to deal more creatively with ill structured problems involving human beings in real situations.

The project will systematize the components of tacit knowledge with the aid of conceptual analysis, epistemology and the demands from society and public debate, from employers, and from students, teachers, researchers and administrators in higher education. The project surveys the capability of higher education to improve the development of tacit knowledge.

The project uses mainly soft data methods: surveys of literature, analyses of concepts and arguments and analysis of secondary material.

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1.1 THE UNIVERSITY AND PROFESSIONALIZATION

Knowledge has become inseparable from power in modern society. In the 1960's professionals were seen more as expert advisors or administrators, i.e. serving power rather than exerting it. But actors with professional education have by now manned leading positions not only in administration, media and education but also in the political and economical power centres themselves. Not only do they serve power, they themselves are entrusted with power.

More than two millennia ago, Plato and Aristotle raised the question of how to select and how to form the rulers of society. Political philosophy has given its answers, political actors and assemblages, theirs. The answer given by modern democracy is: through the university. Higher education has become the institutionalized solution to the problem of selecting and forming the rulers of tomorrow.

The risks inherent in such a situation are obvious. One is meritocracy, where the most able possess the means of manipulating those seen as less able. Another risk involves the quality of higher education. If leaders are selected via higher education, it had better be good.

The results of higher education are questioned by various actors in public debate. It is alleged that certain new professions lack humanistic attitude. In public debate, one demands moral integrity, maturity, a sense of history, creativity, capacity for dealing with real problems. This involves skills, know how, a personal stance and a respect for other persons. Public debate demands a capacity for acting rightly, not merely thinking rightly. We will use Polanyi's (1958) term "tacit" to designate these dimensions of knowledge.

Internal debate in higher education suggests that practical skills, maturity and a personal stance are losing ground to scientific theory (Bergendal 1985, Halldén 1987). More reflective teachers at the university level feel it hard to defend the less tangible qualities of education, developing the judgement of the students. Among administrators, colleagues and students, it is far easier to justify hard and fast course work and objective forms for examinations.

In exercising a profession, one needs capacities which by their very nature tend to escape notice. In higher education, among employers, in public debate, in the professions themselves and among their clients, unclear expectations and demands are placed upon professions. In particular with respect to new professions, unsupported by a professional organization or a long tradition, these demands come to the foreground. Such new professionals are, for instance, engineers, market managers and computer scientists. The demands concern their knowledge, personality and morality.

1.2 THE RESEARCH PROBLEMS

Basically, the research problems are: what is tacit knowledge and how can it be disseminated ? It is of particular interest in newer professions.

The research problems involve concept formation and analysis of tacit knowledge and hypotheses about its development. This involves:

- Analysis of epistemological theory about tacit dimensions of knowledge and skills. In Polanyi (1958), the concept involves several independent dimensions. For Polanyi, tacit knowledge involves impossibility of formulation, the presence of skills, a personal stance and acquisition through submission to authority and tradition.

- Analysis of the logic of the situations in which professionals such as technicians, computer specialists or economists think and act. Thinking, problem solving and acting, and interacting with others in organizational frames presuppose skills more or less common to all professions.

- Analysis of the role tacit knowledge plays in selection of professional personnel and leaders. To what extent do future employers verbally demand tacit knowledge and to what extent do they really prefer such knowledge in recruiting and promoting personnel ?

- Analysis of the development of tacit knowledge and the role higher education can play. This involves the actors' perception of such knowledge, the reward system and the institutional frames of teaching.

1.3 SCIENTIFIC CONTRA TRADITIONAL KNOWLEDGE; A PROBLEM OF RESEARCH ORIENTATION

Skepticism towards the role of science in professional training has been voiced by Gernot Böhme (1980, 1983). According to him, professionalization involves the non-scientific knowledge of artisans being exchanged for science. Böhme characterises science as:

- impersonal and freed from demands on personal maturity,
- progressive; tracing new knowledge while neglecting tradition,
- specialized, which entails difficulties in dealing with diffuse symptoms,
- explicit; characteristically, scientific theory relies on published results
- universal; science is valid all over the world, not only regionally,
- dominating; instead of empathizing with its object, science strives for domination and control.

Böhme rightly points out that valuable elements of knowledge are lost when science replaces previous knowledge.

The issues raised by Böhme's works are complex and Böhme himself is rightly ambiguous about the values involved. One should not

forget that cold, impersonal and scientific technology has in fact reduced infant mortality rates. Romantizing the past is false and futile, glorifying the new technical age can more suitably be handled by its own marketeers.

Starting from Böhme's characterization, one can raise a question of principle. Let us assume that science and technology, with the aid of market forces, will permeate industry, services and administration. Working conditions and the demand for professional labour will radically change.

Such a process could hardly be halted by the cries of warning from humanistic scholars. The consequences of technology are often ambiguous and difficult to predict. Arguments against technology will tend to be diffuse and uncertain, directed to politicians and public opinion. Arguments for technology will promise definite short range profit to decision makers in industry, finance and administration.

But if protests against technology are futile, there seem to be two possibilities. One can either document and save for posterity what is doomed to destruction before modern science and technology pave the ground to erect their own building. Humanistic scholarship is then seen as an archive of a vanished past. Or one might convince builders of the future that parts of the old building should be incorporated into the new one to make it better. The humanities are then seen as participating in a fight to preserve some of the better current virtues for the future.

The contrast is to some extent exaggerated. A plan for preservation presupposes knowledge of what there is; an archive presupposes a selection which will be of interest for the future. We do not feel impelled in this investigation to make a choice. But if and when we do, we will probably feel the role of the future to be more important than the archive of the past.

2. OBSTACLES FOR CULTIVATING TACIT KNOWLEDGE

Let us begin with the development of tacit knowledge. Prima facie, the odds are against a systematic cultivation of tacit knowledge. Some of the relevant factors would seem to be:

A. The institutional settings of modern universities tend to put a premium on verbalized knowledge. One factor is the tradition of the lecture system where a teacher may have classes with hundreds of students. Another major factor is scarcity of resources in the 1970's. Teaching and examining large groups involves verbal input and control of verbal output.

B. Research-oriented universities will select the most able in the academic corps for research and leave teaching to the less able. The quality of research is measured by criteria internal to the community of researchers. Practice outside the university is of little or no merit in university careers. Research universities tend to promote verbalized achievements over practice.

C. The growth of knowledge automatically increases what

students "must" learn. The theoretical and methodological parts of courses will tend to increase at the expense of less obvious results of being at the university.

D. There are indications (Ohlsson 1985) that the university system functions as a means for students to signal to their future employers. Absence of higher education is a negative signal which permits employers to eliminate applicants. Only very rough differences in education would then be used to decide on applicants.

E. Tacit knowledge goes unnoted and this prevents students, teachers, administrators and employers from putting a premium on the qualities it involves. The difficulties of describing and measuring such knowledge make it hard to formulate it in terms of goals of education and to evaluate whether the goals are reached. The loftiness of the tacit dimension encourages scepticism among realistic actors and a rewarding dwelling ground for charlatans in education.

F. Tacit knowledge can be superimposed on course work, a side effect, depending on teacher personality, teaching methods, group discussions and university life at large. There can be no guarantee, to put it mildly, that regular course work in ethical theory or history creates moral integrity or a sense of history. It is unclear which institutional arrangements could promote tacit knowledge

These obstacles should not be underestimated.

But on the other hand, there are also indications of a real demand for the kind of knowledge we denote as "tacit". Extensive programs for leadership training, personal efficiency, business ethic, etc. indicate that there is a perceived need within personnel development for increasing their "tacit knowledge". It is a fact that such courses are developed, conducted and evaluated with some degree of success.

Thus, these obstacles should not be overestimated.

3. A PROBLEMATIZATION OF THE PROFESSIONAL ROLE

Below, we will put in the foreground aspects on the professional role. We feel that our investigation can fruitfully study some of the ways professionals can:

- put their knowledge into action
- solve problems of very different types types
- acquire knowledge
- maintain, distribute and coordinate knowledge among others
- know of and handle relations with organizations
- use their own profession
- understand others and interact with them
- reason and act in moral issues
- acquire and maintain a robust sense of reality

3.1 ANALYSING KNOWLEDGE AND PRACTICE

Professionals act on the basis of professed knowledge. This knowledge can be general or specific for the action required. A physician may, e.g., acquire specific knowledge by questioning and examining the patient. In diagnosing and deciding on a treatment, he relies on more general knowledge of various diseases and how they relate to the specific facts at hand. The professional puts general knowledge to use.

In order to put general knowledge to use in a particular case, it is necessary to maximize information uptake in the case. Techniques for measuring and testing are often well developed, whereas techniques for collecting soft data - such as interviewing and observing - are less emphasized in professional education. Interview technique, for instance, is not an obligatory part of the education of physicians and has only recently been introduced into the curriculum at some universities in Sweden.

There are various theories about the relation of general and specific knowledge. Schön (1983) criticizes what he calls "the positivist epistemology of practice". This epistemology assumes that basic scientific knowledge casts off models, rules and techniques to be used in practice. Practice consists in the proper use of these models: the professional uses described, tested and replicable techniques of problem diagnosis and solution. We may describe such an epistemology in more neutral terms as "model + applications".

Schön claims that the practitioner faces a dilemma of rigour and relevance. Ready-made, rigourous models focus on problems that readily can be solved and blind the professional to highly relevant but ill-defined properties of the situation. The civil engineer might have rigorous models for constructing a road. But he may lack relevant models of where to build that road, a decision which involves geographic, financial, economic and political factors.

Even though Schön's points are well taken, his own alternative called "reflection-in-action" (Schön 1983), is far from clear. The limitations of the model + applications view seem to be of various kinds, e.g., the existence of too many factors to control, their interrelations and relative weight being unclear. It is obvious that professionals can think and act when confronted with such situations. Some do it more rationally, others less so. But it is very difficult to describe what it is they are doing. Nor is it clear to what extent, if any, theory is really used by the professional in such a process. It is also unclear whether and in what way good performances can be distinguished from bad ones.

3.2 SOLVING PROBLEMS AND "MANAGING MESSES" IN PRACTICE

The positivist epistemology described by Schön gravitates towards problem solving as model + application. Theories of problem solving in Artificial Intelligence make similar assumptions (Simon 1979). Via a logical analysis of a description of the

situation and a decision-theoretical and heuristic evaluation of the alternatives available, a rational decision is taken.

Such theories of problem solving presuppose that problems are fairly well defined and that the practitioner solves them by pulling a ready made model out of his repertoire. But in reality, the contrary is often the case (Schön 1983). Problems are often ill defined and it is unclear what would count as a solution. The practitioner does not always solve problems; sometimes he is "managing messes" (Schön).

When the goals of an organization are unclear, it is impossible to give criteria beforehand to define a space of possible solutions. The problems themselves may be ill defined; it is unclear which factors can be changed, and methods, restrictions and costs for searching and finding a solution are not fixed. For instance, in policy-making it might seem that the only criterion for a good solution is its acceptability to the parties concerned. The practitioner will then "solve problems" by trying to please the majority of those who have a voice in the decision to be taken. Those whose interests are violated must either be kept ignorant or be manipulated by the policy makers.

The notion of a "problem" involves a cognitive dimension. Such dimensions have been studied in traditional logic and epistemology ever since Aristotle. Modern philosophy of science and heuristic after Polya contains important clues, studied in analytical epistemology (e.g. Lakatos 1976, Laudan 1977) and in "Project Zero" at Harvard (Perkins 1981). But methods for dealing with ill-defined messes and non-cognitive dimensions of problems are less well understood.

Notions of value and power are central to selecting, identifying and conceptualizing problems or messes in social settings and for solving or managing them in ways that will appear acceptable.

Of importance are emotions and perceptions of the purpose of one's organization. For instance, in a study of Catholic theologians, Scarpino et al. (1983) found correlations between preference for problem types, methods of investigation and cognitive styles on the one hand and on the other hand, an ideal of the Church. Those who preferred the Church to act as a reconciliator favoured ill-structured problems involving conflicts, while those who perceived the Church as a hierarchical structure tended to choose problems solvable in an impersonal, factual style by methods of an analytic or inductive type.

3.3 ACQUIRING KNOWLEDGE

Various models have been proposed for the education of professionals (Argyris & Schön 1976):

A) The knowledge needed by the professional involves models + applications. Schooling of professionals should develop useful theory.

B) Professional knowledge involves intuitive knowledge which cannot even in principle be formulated. Professionals cannot explain what it is they know, not even to each other. Practical

knowledge develops on the job, for example by trial and error, by imitation or by personal master-apprentice relations.

C) The professional school should teach the student to think like a professional; there is a manner of thinking characteristic for each profession which can be taught at schools.

D) Education of professionals must involve both theory and practice. Practice in the form of simulation and field experience develop the capacity for using theory in action. The more realistic the practice, the more difficulties there will be in administrating it within the boundaries of a school system.

The view advocated by Schön and Argyris is D. One should also mention a fifth point of view:

E) Higher education of professionals gives knowledge which is of more harm than use in relation to what they could develop in practice outside institutions of learning. Professions use higher education mainly to legitimize their expertise and to exclude other groups from power and from the labour market.

The fifth viewpoint comprises lines of thought present in Illich's program for "deschooling" society or in Feyerabend's anarchistic epistemology.

3.4 KNOWLEDGE MAINTENANCE, DISTRIBUTION AND COORDINATION

In their careers, professionals often can confront general knowledge ("theories", "concepts" and "methods") with reality ("practice"). They have many opportunities for "testing" the theories they have been taught - or at least testing the usefulness of such theories. We may expect that professionals can develop certain strategies for refining those theories, for defining their fields of applications, for selecting between alternative or conflicting theories.

In rapidly developing fields such as technology, professionals who are out of practice will lose their competence within a few years. Professionals must keep their knowledge up-to-date. This might involve contacts with current research and development, or for professions involving care or service, perhaps also with clients.

Conferences and informal discussions between colleagues is one important way of updating knowledge. New knowledge is distributed within the profession itself. Huberman (1983) conjectures from a study of teachers that information seeking among professionals is directed towards readily available knowledge which pays off rapidly and which is guaranteed by other practitioners.

Sometimes mass media act to update information among professionals. In 1984, a large media campaign against incest was launched in Sweden. Social workers and physicians were largely untrained to tackle the problem, and some of them uncritically became a victim of media disinformation (Gill-Wettergren 1985).

Knowledge in an organization often functions without there being a "knowing subject". There is no individual possessing the knowledge exercised in collective action - knowledge is exercised

in team work. An example is the surgical team, where there are specialists in surgery, others in anaesthetics. In an organization, there is a "division of cognitive labour".

Professionals in an organization must have some grasp of who knows what - and of who should know what. The members in the team must exercise their knowledge coordinated with each other. It involves for members of a working team to be aware of the knowledge they themselves and their colleagues have and to accommodate accordingly. The members of the surgical team must be able to distinguish what falls within their own areas of competency and what belongs to which colleagues' domain of knowledge and action.

We may describe such tacit knowledge by the term "second order knowledge" (cf. Argyris & Schön (1978) "second loop learning"). It involves the capacity for surveying one's own knowledge as well as that of others. One can discover its limits, its systematic aberrations from reality and strategies for concealing ignorance.

Such second order knowledge also includes knowledge and capacities necessary for accommodating the organization in new situations. Legal regulations or a changing market can make the goals and policies of an organization obsolete. In order to deal with a changing environment, an organization must have professionals capable to reason about, evaluate and possibly reject previous goals and values in favour of new ones. Second order knowledge is necessary for organizations accommodating to new environments.

3.5 PROFESSIONAL KNOWLEDGE OF ORGANIZATIONS

Organizations have a labour division among their members in order to achieve certain goals. They are endowed with one or several power centres defining, controlling and acting towards these goals. In an organization, there may occur conflicts concerning goals and means, power, division of labour and means of exercising control.

Professionals must acquire knowledge about the organizations they work for as well as those they work against. Let us consider a marketing professional in a company selling industrial goods. In order to influence the production line to take up a new product, the market manager needs to know which messages will influence which decision takers. He will have to direct his arguments to the right power centres, select the right arguments. The market manager will also survey the competitor's profiles and strategies and use his knowledge about their intentions and future decisions in order to design a market strategy of his own. In dealing with customers, the market manager will try to map the possible ways an affirmative sales decision could be reached (Kotler 1986).

The skills needed involve the capacity to map out organizations and their actors - his own from the inside, other organizations partially from the outside. He will gather information through open channels, minutes of meetings and reports, through professional journals and through gossip. He will evaluate and draw conclusions from such information.

On the basis of his analysis, he will plan the actions of his own organization. Through arguments, persuasion and negotiation, he will try to influence his own company and its customers.

3.6 PROFESSIONS AND THE PROFESSIONAL

Professionals can be related to their professions in various ways as described by Hellberg (1978). Knowledge and competence acquired by the professional may, for instance, be controlled and conveyed by other members in the profession. During their education, doctors and lawyers spend some time under the supervision of other members of their professions. In research, doctors develop the knowledge basic for practitioners, they act as teachers and trainers deciding what knowledge is needed by new members of the profession.

Professions often maintain a code of ethic and a sense of esprit de corps among their members. Professions can warn or expel members who do not live up to the required standard. Ethical codes may be directed towards the protection of clients, of employers and of the profession itself or its reputation. The profession maintains solidarity between its members by spreading new information and taking a stand on issues relevant to the profession or to individual members. For instance, a teacher in conflict with pupils or school authorities can often count on support from professional journals.

Generally, professions claim a monopoly on knowledge necessary to perform the tasks required by the clients. Conflicts may arise when new groups of actors market their services, for instance when diet experts or practitioners of acupuncture claim competence in health care. The legitimation of its own members is often accompanied by attempts to "de-legitimize" competing groups on the service market.

The relation to his profession can be expected to play a role in establishing the practitioner's levels of success and failure. For instance, a jury collected from advertising agencies can evaluate and reward advertisements on the basis of their subjectively-estimated capacity to draw attention and to entertain. In this way, a profession can entertain a myth of high professional quality and still be ignorant about those effects the clients pay for - an increase in sales.

Also in the assessment of moral success and failure, a profession might gain advantages by acting as its own sole judge. Professions can establish courts of honour manned mainly by their own members if displaying a disinterested service attitude towards clients and society. If the profession has no interests which could conflict with their clients, clients need no representation.

3.7 RELATIONS TO OTHERS

Let us start by describing two conflicting views on the relation of the professional to others.

1. In his profession, the professional continually deals with other people: clients, colleagues, subordinates and superiors.

Interaction with them to a large extent determines the outcome for the organization and for the professional himself. It is necessary for him to develop strategies for predicting and controlling their behaviour in order to maximize the efficiency of the organization and of his own labour.

Some might want to protest against such a view, calling it technocratic and reproaching the professional for treating other people only as means to his own or the organization's ends. Even when these ends are good, his actions are dehumanizing.

The other view would probably label itself "humanistic":

2. In his profession, the professional takes responsibility for other persons: clients, colleagues, subordinates and superiors. Treating them as persons means treating them not only as means but as ends in themselves. As autonomous persons, they will respect human dignity in others. This should not involve merely giving people what they want; the professional must rather see to their potential and help them achieve self-realization.

For those with some sympathy with the first view, the humanistic stance will seem a collection of bombastic verbalisms which only serve the purpose of white-washing what nevertheless must go on if things are to get done.

We feel both sides have important points and navigation between these perspectives will turn out to be difficult.

Another controversy roughly divides combatants into two metaphysical schools:

1. Man has no essence. There is little predictive value based on his personality, character traits (whatever that is), previous experience or behaviour patterns. The best predictions of his future actions arise from a consideration of the organizational frame, the role assigned to him and the type of situation he is in.

2. Man has substance. His past actions and experiences help form his personality. The kind of person he is determines how he will choose in the future. His past, together with clues about his personality, are of considerable help in predicting his future decisions.

How do these two positions relate to practice ? A professional negotiator exemplifying the ideology of the first school will try to predict the possible outcomes of negotiations by looking at the organizations involved, the situation and what the role as a negotiator will entail. Another negotiator following the principle of the second school will base his predictions on the personality of the other and try various psychological means of influencing the other party.

A reasonable hypothesis is that personnel managers are committed to a belief that men are different due to differences in personality. There would be little sense in selecting people with care unless personal qualities had great predictive value. On the other hand, schools of modern psychology claim that there are substantial reasons to doubt such predictions and the clues

underlying them. There seems to be a conflict between practical and theoretical psychology (Sjöberg 1985).

Furthermore, it may be that some professionals consider knowledge of others so uncertain that they try not to guess at intentions but instead apply rules for decisions under uncertainty.

Finally, there is a metaproblem of our own investigation. If a map of the territory is to be of use, the territory must be fairly stable so that it does not change during or immediately after the mapping is finished. But if man has no essence, how can professional strategies for judging others be described ?

We have not decided about the impact of these problems on the investigation.

3.8 MORAL REASONING AND ACTION

Changing society involves different conceptions of morality. In "The Lonely Crowd" (1950), David Riesman sketches types of societies and men. One type can be exemplified by medieval Europe where farming dominated economic life. Newer generations take over the roles of the adults; tradition dominates society, individuals are directed by custom. Another type is found in the rising capitalism. Responsible only to his own conscience, the protestant capitalist is able to violate traditional norms and customs. Society develops rapidly due to the industry of inner-directed individualists. A third type, Riesman calls "other-directed". When socioeconomic structures have cast off a decent material wealth and left little room for individual expansion, individuals must learn to accommodate. It becomes necessary to locate and adjust to the needs and wants of others. Other-directed man is not happy. Anxious to accommodate others, he engages in intrigues and strikes compromises with his real wants. In consuming, he vainly strives for compensation by satisfying meaningless wants.

In contrast to these types, Riesman sketches an ideal of man called "autonomous". Autonomous man can choose between being guided by tradition, by his inner wants or by the wants and needs of others. He has a notion of self, of others and of historic tradition, and he uses reason to balance various claims.

In modern philosophy of mind, the conception of self has risen to the foreground as a means of defining persons. Persons are characterised not only by having beliefs, needs and wants but also by having beliefs or wants of second or even higher order. When I feel that you should not demand me to adopt a certain policy, I have a second order want. If I discover that you suspect that I intend to steal your wallet, I have a belief of the third order (cf Dennett 1978).

Moral reasoning involves considering and balancing such systems of beliefs and wants. Moral reasoning can take various forms, e.g. those one can sketch on the basis of Kohlberg (1981):

- Punishment oriented. Right actions are those where I can go unpunished.
- Instrumentalism. I satisfy my needs and strike fair deals with you for that purpose.
- Conformism. I had better be a good boy and live up to what others expect of me.
- Authoritarian orientation. The law is there for us to obey.
- Contractualism. We have rights which no just law can violate. Legal and moral obligations can conflict with one another.
- Universalism. The right action considers the equal rights and value of human beings. It respects their dignity.

Kohlberg asserts that human moral development takes place by means of a progression from the first, "lower", to the later, "higher", stages. The empirical grounds for such a claim are not strong.

Nevertheless, the headings above permit a classification of moral reasoning in professions. A reasonable conjecture is that fragments of all types can occur in the assessment of the right course of action.

Moral theory needs to be connected to action. Without a sense of tactics and a determination to act, the moral strategist will not win any moral battles. For moral action, the professional needs to plan a campaign, convince by arguments, negotiation and credible power display. He needs to parry persuasion and propaganda from the opposing side. In a field of conflicting interests, it would be an illusion to believe that the most moral course of action - or least immoral one - automatically gains support.

The question moral education then faces is: should the practitioner be told to keep his hands clean; should he be taught moral ideals that cannot be carried out in practice. Or should he be taught how to keep his hands a bit dirty in order to avoid getting dirt all over ?

If the better alternative is the second one - as we preliminarily believe - the tactics the practitioner will need is described in literature describing rhetoric, propaganda, campaigns and organizational dysfunctions.

3.9 ANALYSING THE SENSE OF REALITY

In methods of teaching and instructing, the emphasis is often put on the exchange of verbalized pieces of information. Language is the means of conveying knowledge and of checking whether the knowledge has been conveyed.

Language is abstract. A word like "tree" gives no information about the sensible qualities of the old apple tree back in the garden with its yellow autumn leaves. Reality can shed more information than could ever be captured in language. There is no such thing as an exhaustive description of reality. Reality is many faceted, we can interact with real things indefinitely. Reality can present ever new possibilities of sorting,

classifying and grouping what we distinguish as parts. Schön (1983) speaks of the practitioner as "conversing with reality" when interacting with it to elicit ever more information from it.

University education removes the arena of education from the real world where the lessons from school should be enacted. But as actors, we are anchored to reality by causation. Our identity is determined by our past, by nature, by our social environment and by our own choice. The consequences of our actions will affect others, it will form their conditions, their lives and them themselves.

Emotions and volitions permeate the practitioner's thinking and acting. In joy, in fright or in anger, he perceives the situations facing him and the results he accomplishes. Reality appears to him, marked with DO and DON'T. Only after his action is accomplished will he be able to present a reconstruction of a rational line of thought in his actions.

Emotions are sometimes supposed to be an obstacle to the impartiality demanded from the practitioner. A judge administrating punishments to criminals might find it difficult to handle a combination of pity and a sense of his own fallible judgement.

Reality kicks, it has been said, and it often hurts our emotions. Various strategies can be undertaken to cope with personal emotions and the role in which the professional acts. Defence mechanisms described by psychoanalysis conceal unpleasant facets of reality.

However, concealment is often an obstacle to efficiency and well-being. The environment of the professional - critics inside or outside the profession - might expose self-conceit.

The practitioner is immersed in harmonizing and conflicting streams of social life. If too precautious, friends and success will not find him. If too offensive, enemies might turn his aspirations into defeat.

4. WORK PLAN

The project will be conducted in two phases during a period of four years, the first phase lasting one year. The plan for the first year is based on the following considerations.

One point of departure is what is known, believed and desired today. The number of research results and secondary material of potential relevance to the project is very large. It will be localized and research methods for working it up will be developed.

Strategies for dividing research labour will be developed, subprojects will be delimited with respect to their use in the major project. Methods and means for publishing and making the results of the projects useful will be developed.

Another major aim for the first year will be to structure the problems sketched above. The structure indicated above needs to be subjected to a deeper analysis. At the same time, the concept

of "tacit knowledge" and a few related concepts will be developed to unite the various aspects. One study will deal with tacit knowledge from an epistemological point of view, analysing the concept in Polanyi (1958) and in the tradition upon which he draws. Related concepts have also been studied in the social sciences and another study will be devoted to their approach.

The second year, we will start analysing tacit knowledge in use and on the labour market. This involves a study of the way professionals utilize their tacit knowledge in work situations. Another study will analyse demands on professionals in recruiting, promoting and educating professionals on the labour market. Our methods will be centered on material - mainly secondary - collected from the first year.

During the third year, we will turn to higher education, analysing the concepts of tacit knowledge employed there. The conceptions among various actors will be assessed, i.e. the conceptions of students, teachers, administrators and ideologists within higher education. Of particular interest are their methods for analysing and arguing educational needs.

The fourth year will integrate the findings and add perspectives from society at large. A major monograph will document our findings.

The project uses a wide spectrum of soft-data methods from the humanities and the social sciences. Methods are selected on the basis of research economy: the value of the knowledge must be weighed against costs and labour for acquiring it. Research methods and results will be checked off against current research and the picture of reality in professions, in higher education and administration and among employers.

One can hardly expect a high degree of certainty, operationally defined concepts and generalizable laws in a study of tacit knowledge. When loosely defined notions are involved, operational definitions become doubtful. A search for general laws has small prospects of success when there is a large, indeterminate number of variables involved. Furthermore, methods for dealing with hard data are extremely expensive and labour intensive.

Given the goals of describing and analysing tacit knowledge, soft-data methods are the most cost-efficient methods available.

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